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**PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John P. Millward

Examiner:

Serial Number: 10/081,443

Art Unit: 1723

Filed: February 22, 2002

Atty Docket No.: 334-1-002

For: "Dry Crop Supplement Injection Systems, Micronized Crop Supplements for Use in Injection Systems, and Methods for Injection of Crop Supplements"

RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS

Box Missing Parts
Commissioner for Patents
Washington, D.C. 20231

Sir:

Responsive to the Notice to File Corrected Application Papers of March 15, 2002, applicant amends as follows:

The Abstract of the Disclosure is written in amended form as follows:

A dry supplement injection system produces a supplement slurry which is continuously introduced into a flow of irrigation water. The injection system includes a hopper having a cylindrical upper portion and a tapered lower portion terminating at a slurry outlet opening. An inverted perforated funnel assembly is disposed within the hopper. A spray nozzle connected to a water inlet pipe sprays water onto the inner surface of the funnel such that particles of micronized supplement in the hopper are washed through the perforated funnel forming a slurry. A mixing pan disposed below the hopper acts as a reservoir to hold slurry until pumped out through a slurry pump

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to. Box Missing Parts , Commissioner for Patents, Washington, DC 20231, on this 15 day of May, 2002

Signed Robert R. Mallinckrodt Dated May 15, 2002

Robert R. Mallinckrodt

which pumps the slurry into a pressurized irrigation water pipe. Gravity feed of the slurry may replace the slurry pump for applications where the irrigation water is non-pressurized such as flood irrigation.

Please charge any additional fees due, or deposit any overpayments, to Deposit Account No. 13-1175 of the undersigned.

Respectfully,

MALLINCKRODT & MALLINCKRODT

Robert R. Mallinckrodt
Attorney for Applicant
Registration No. 26,565
Customer No. 27469

May 15, 2002
Salt Lake City, UT
gen:p\334 Millward\002-new abstract wpd

**Version with Markings to Show Changes Made**

A dry supplement injection system [and method for fertigation of crops, and a micronized supplement for use in the dry supplement injection system to fertilize the crops. The injection system is connectable to a water supply to produce] produces a supplement slurry [with the supplement] which is continuously introduced into a flow of irrigation water [for watering the crops]. The injection system includes a hopper having a cylindrical upper portion [having a supplement inlet opening] and a tapered lower portion terminating at a slurry outlet opening. [A] An inverted perforated funnel assembly is disposed within the hopper [that includes an inverted, perforated funnel with a vertically disposed inlet pipe that extends through an upper opening of the funnel and which is clamped to the funnel, with a]. A spray nozzle connected to a [lower end of the] water inlet pipe [to spray] sprays water [onto an inner surface of the funnel. An inlet water pipe system includes a main pipe that connects to the water source through an outer wall of the hopper to the inlet pipe and the spray nozzle. Water discharged from the spray nozzle impinges on] onto the inner surface of the funnel such that particles of micronized supplement in the hopper are washed through the perforated funnel forming a slurry. [The particles are of a small size such that any undissolved particles do not readily settle out of the slurry.] A mixing pan disposed below the hopper acts as a reservoir to hold slurry until pumped out [thereof through an outlet water pipe system that includes] through a slurry pump which [draws slurry from the mixing pan and] pumps the slurry [under pressure] into a pressurized irrigation water pipe [through which the flow of irrigation water flows for irrigating the crops]. Gravity feed of the slurry may replace the slurry pump for applications where the irrigation water is non-pressurized such as flood irrigation. [A float valve connected to the

main water pipe assures a minimum level of slurry is contained within the mixing pan, water which enters the mixing pan through the float valve entering tangentially to stir the slurry to further minimize settling of undissolved particles in the mixing pan.]